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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,803	02/09/2005	Keisuke Suzuki	033082M241	6099
441 7590 03/12/2009 SMITH, GAMBRELL & RUSSELL 1130 CONNECTICUT AVENUE, N.W., SUITE 1130 WASHINGTON, DC 20036			EXAMINER BURKHART, ELIZABETH A	
			ART UNIT 1792	PAPER NUMBER
			MAIL DATE 03/12/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/523,803

**Applicant(s)**

SUZUKI ET AL.

**Examiner**

Elizabeth Burkhart

**Art Unit**

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11 is/are allowed.
- 6) ☒ Claim(s) 12-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CIS)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

### **DETAILED ACTION**

1. Claims 1-17 are pending in the application. Amended claims 1, 12, 16, and 17 have been noted.

#### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/23/2009 has been entered.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 12, 13, 16, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakamoto et al (US 2002/0001788).

Sakamoto teaches a thermal processing unit comprising: a substrate holder that holds a plurality of substrates (wafer boat), a reaction container into which the substrate holder is conveyed, a plurality of heating units that respectively heats a plurality of zones in the reaction container, a process gas introducing unit that introduces process gas into the reaction container, a temperature setting part that carries out the thermal

process to a plurality of first substrates and sets respective temperature set values of the plurality of heating units based on thickness of thin films formed on said substrates, a temperature correcting part that carries out the thermal process to a plurality of second substrates and that corrects temperature set values of the plurality of heating units based on thickness of thin films formed on said substrates, and a production-substrate thermal processing part that carries out the thermal process to a plurality of production substrates (Fig. 1, [0056]-[0062], [0073]-[0078]).

The limitations "wherein thin films are formed on surfaces of the plurality of first substrates by less consumption of the process gas per film thickness", "a plurality of second substrates, different from the plurality of first substrates", "wherein thin films are formed on surfaces of the plurality of second substrates by more consumption of the process gas per film thickness", and "the first substrates are fully arranged in a holding region" are merely intended use of the apparatus and do not structurally distinguish the claims from the prior art. The apparatus of Sakamoto provides a structure that is capable of performing in the manner claimed and thus meets the claims.

Regarding Claim 17, Sakamoto further teaches that the apparatus comprises a temperature setting program that sets temperature set values of the plurality of heating units and a temperature correcting program that corrects temperature set values of the plurality of heating units [0067].

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al (US 2002/0001788) as applied above in view of Suzuki et al (US 2002/0014483).

Sakamoto is silent to the apparatus comprising a substrate-conveying unit that conveys a substrate onto the substrate holder and a judging part that judges the number of substrates.

Suzuki teaches an apparatus similar to that of Sakamoto having a substrate-conveying unit that conveys a substrate onto the substrate holder and a judging part that judges the number of substrates. The thermal processing part of Suzuki, adapted to control the substrate-conveying unit, is capable of arranging substrates at different portions in the holding region [0072].

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to use the substrate-conveying unit and judging part of Suzuki in the apparatus of Sakamoto since it was a known means of conveying substrates into wafer boats and would provide the additional advantage of recognizing the number of wafers to be processed in order to avoid manual operations.

Thus, claims 14 and 15 would have been obvious within the meaning of 35 USC 103 over the combined teachings of Sakamoto and Suzuki.

***Allowable Subject Matter***

5. Claims 1-11 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The closest prior art does not teach a first thermal processing step using a plurality of first substrates, wherein thin films are formed on the first substrates by less consumption of the process gas per film thickness than on surfaces of the production substrates and a second thermal processing step using a plurality of second substrates, different from the plurality of first substrates, wherein thin films are formed on the second substrates by more consumption of the process gas per film thickness than on the surfaces of the first substrates. Sakamoto (US 2002/0001788) discloses first and second thermal processing steps using a plurality of first and second substrates, respectively, but does not teach using second substrates that are different from the first substrates or the different consumption amounts.

### ***Response to Arguments***

6. Applicant's arguments are directed toward the new limitations in the claims. The new limitations have been addressed above.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Burkhart whose telephone number is (571)272-6647. The examiner can normally be reached on M-Th 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elizabeth Burkhart/  
Examiner, Art Unit 1792

/Timothy H Meeks/  
Supervisory Patent Examiner, Art Unit 1792